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ABSTRACT

Internal and external factors that influence student motivation are considered from the perspectives of the student and of the teacher. It has been found that the student brings to the learning situation characteristics that have a direct bearing on individual motivation. High self esteem and level of aspiration are present in a motivated student, as well as the need to achieve. The characteristics and personality of the teacher, while impinging to some degree on student performance, appear to have less influence on motivation than what the teacher does to and with students. Teacher expectations, the setting of goals and instructional objectives, and the providing of feedback and positive reinforcement all influence student motivation. Some techniques for increasing motivation are described. (JD)

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What Research Says to the Teacher

MOTIVATION

by Raymond J. Wlodkowski

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INTRODUCTION

People have always been interested in why they behave the way they do. *Motivation* is often the word that is used to explain human behavior. Individuals involved in education generally strongly advocate that teachers should be knowledgeable about motivation. Most teachers, whatever their theoretical or philosophical background, accept the premise that learning cannot occur without motivation. Yet, what to do in order to facilitate student motivation is a common problem. Few people agree on a single definition of motivation, nor do they approach learning situations with any consistent strategy as to how to promote motivation. Bolles has written that motivation is not a concrete observable fact of behavior nor a direct aspect of experience. (8)* Cofer has argued that the term *motivation* is not a useful word and may be unnecessary as a concept or organizing principle. (15)

With respect to these points of views, there still appear to be well-researched systematizing ideas that can be applied to learning environments in accordance with a firm regard for motivation principles. (76) First, however, there must be some general understanding of what *motivation* means.

What Is Motivation?

When a person accomplishes something, learns a new skill, or succeeds, that person is often said to be motivated. When that same person gives up a task, is not able to learn a new skill, or fails, that person

*Numbers in parentheses appearing in the text refer to the Selected References beginning on page 27.

is often labeled unmotivated. It is as though motivation were the direct cause of all behavior. It is not. It is simply a concept that is used, often with great difficulty, to explain *why* human behavior occurs. As defined by most psychologists and educators, *motivation* is the word used to describe those processes that can (a) arouse and instigate behavior; (b) give direction or purpose to behavior; (c) continue to allow behavior to persist; and (d) lead to choosing or preferring a particular behavior. A *motive* is any condition within a person that affects his/her readiness to initiate or continue any activity or sequence of activities; for example, as experiencing a need to understand may be the motive for reading a particular book.

There are many different theoretical positions which explain motivation, and each has its own body of research and empirical findings. Hence, the application of each theory to classroom behavior may differ and cause confusion for the practitioner. However, since the theories do in many instances overlap because identical explanatory constructs are at times made a part of more than one theory, they can often be used in a cohesive manner. (73) To say the least, no one has yet "cornered the market" on motivation. In order to avoid confusion, the author has chosen to leave the finer distinctions between theories in their unresolved state and to extract from the research those findings which may be most productive and useful for day-to-day teaching.

Motivation and Learning

What is the relationship of motivation to learning? If learning at its most basic level is a change in behaving, thinking, or feeling, does the motivated person change more quickly, for a longer period of time, or with more profound effects? Sadly, the answer to this question remains uncertain. In fact, it is not even clear from laboratory research whether hungry rats learn faster than nonhungry rats. (72) Pity the teacher in today's classroom in a complex society with all those individually different kids!

There is no conclusive evidence to support the intuitive notion that motivation enhances learning. (73) The effects of motivation may depend on the type of learning (reinforcement learning, insight learning, etc.), the type of task (verbal, nonverbal, simple or complex, etc.), and the type of setting (groups or individual, public or private, etc.) as well as the type of learner. There are many variables that must be considered before the

state of a person's motivational being can be regarded as beneficial to the learning task at hand. The implications of this are not so much confusing as enlightening.

If we appreciate the complexity of the relationship between learning and motivation, we can more readily accept our daily difficulty in the teaching process. We can better realize our need to utilize more effectively an understanding of the variables which are outlined in this book. We can, with satisfaction, reject student "laziness" or apathy as simplistic excuses for unsuccessful teaching. We can more safely rely on the process or performance of our students when they attempt to learn rather than on the more narrow and self-defeating emphasis of product or acquisition as the criteria for judgment of effective teaching. The goal of understanding what research has to say about motivation and learning is not only to help a student to read or compute better but to help bring about a person who enjoys and is excited about reading and computing better.

Current Trends

Within the last twenty years there has been a growing understanding that human behavior is complex and determined by many factors. (73) No single explanation—such as reinforcement theory, instinct, or need—can comprehensively predict the diverse patterns of student learning. Although still quite popular, there has been a decrease in the use of homeostatis as the basic principle of motivation. Behavior, in many instances, appears to be an end in itself. (48) Approach and avoidance behavior as well as the concept of intrinsic motivation have gained in acceptance among educators and psychologists.

There is an expanding body of research that deals with environmental determinants of learning, such as incentives, ecological factors, and cultural and social variables. (6) Individual differences in learning styles is now a widely accepted phenomenon in classroom research. Probably the most significant change in motivation theory has been the general acceptance that human beings of all ages are continuously active and do not rely on external prodding or stimulation to instigate their behavior. (73) For teachers, this implies that students are continuously motivated, if not necessarily to learn, certainly to act on a regular and constant basis. Therefore, educators may want to consider the direction and guidance of learners as well as their volition and perseverance toward learning as the major challenges of present-day teaching.

Intrinsic and Extrinsic Motivation

Extrinsic motivation emphasizes the value an individual places on the ends of an action and the probability of reaching those ends. In extrinsic motivation the goal of the behavior and not the "doing" of the behavior is considered to be the reason for the performance of the behavior. So when we say a student learned a skill or performed a task in order to get a higher grade, recognition from classmates, or praise from the teacher, we are accounting for that student's behavior primarily on the basis of extrinsic motivation. Intrinsic motivation refers to the pleasure or value associated with an activity itself. In intrinsic motivation the "doing" of the behavior is considered to be the primary reason for the performance of that behavior. There is good evidence that many learning activities that involve manipulation, exploration, and information-processing provide satisfaction in and of themselves. (7) Students do read because it is enjoyable, and many also write, compute, and think for no other reason than the pleasure of those activities themselves. In these instances we are inferring intrinsic motivation.

Although making valued extrinsic rewards contingent on learning behavior can be a generally effective motivational strategy, many educators question this practice. One reason is the finding of Kazdin and Bootzen, who note in their research on token economies that while apparent conditioning procedures have been quite effective in altering focal behaviors in controlled setting, seldom have these changes been found to generalize to natural nonreinforcing environments. (47) Another reason appears to be the moral concern that "bribing" students to learn is inherently wrong. There is a significant criticism that students will be turned into "reinforcement junkies" who must always have something extra in order to learn. Finally, there is the very real matter that the extrinsic reward system (e.g., grades, praise, recognition, etc.) may interfere with and decrease intrinsic motivational properties within the learning behavior itself. There has been considerable research and experimentation with regard to this issue.

Lepper, Greene, and Nisbett showed that the introduction of an extrinsic reward for performing an already interesting activity caused a significant decrease in intrinsic motivation. (50) Children who played with Magic Markers with the expectation of receiving an external reward did not spend as much subsequent free time on the activity as did children who were not given a reward or those who were unexpectedly offered the

reward. Moreover, the rated quality of drawings made by children with the markers was significantly poorer in the expected reward group than either the no-reward or unexpected reward groups.

In another experiment, by Calder and Staw, a more comprehensive viewpoint of the interaction between extrinsic and intrinsic motivational systems is described. (11) In this study male college students were asked to solve one of two sets of puzzles identical in all respects except the potential for intrinsic interest. One set of puzzles was pictorial and provocative while the other set was blank and neutral. To manipulate extrinsic rewards, half the subjects were promised one dollar for 20 minutes of labor while for the other half of the subjects money was not mentioned. The results of this study were that when the task was initially interesting (i.e., picture puzzle activity), the introduction of money caused a reduction of task satisfaction. However, when the task was initially more neutral (i.e., blank puzzle activity), the introduction of money increased task satisfaction. Thus it appears that in situations where the behavior is interesting and stimulating, to add an external reward becomes what might be called overly sufficient justification and decreases intrinsic motivation. However, in those instances where the behavior is not relatively interesting or stimulating, the addition of an external reward increases task satisfaction.

Staw's review of research on intrinsic and extrinsic motivation leads him to conclude that:

> there is no doubt that grades, gold stars and other such incentives can alter the direction and vigor of specific "in school" behaviors (e.g., getting students to complete assigned exercises by a particular date). But because of their effect on intrinsic motivation, extrinsic rewards may also weaken a student's general interest in learning tasks and decrease voluntary learning behavior that extends beyond the school setting. In essence, then, the extrinsic forces that work so well at motivating and controlling specific task behaviors may actually cause the extinction of these same behaviors within situations devoid of external reinforcers. This is an important consideration for educational organizations since most of an individual's learning activity will no doubt occur outside of the highly regulated and reinforced setting of the classroom. (64)

It appears, based on current research, that in order to maintain students' intrinsic motivations the use of extrinsic rewards must be carefully

monitored. When a learning task is inherently interesting and would probably be performed without any external incentive, the addition of any extraneous rewards should be minimized. Only when the learning task appears too devoid of intrinsic value should the application of extrinsic systems of facilitating motivation be considered.

MOTIVATION AND THE ROLE OF THE STUDENT

One way to study the research on motivation is to consider what has been found regarding what the student brings to the learning situation as it relates to motivation. Teachers continuously work with students who are in the classroom because they have to be there. Both parties bring with them behaviors, attitudes, and expectancies which are a result of past experience. However, learning takes place in the *now*, and the past does affect the present in terms of what is often brought to the learning situation. One such powerful factor often based on past experience is the student's self-esteem.

Self-Esteem

There is a significant body of clinical and experimental research which indicates that persons strive to behave in a manner which is consistent with how they view themselves. (32) Coopersmith has reported that a student's success in school is dramatically affected by his/her sense of self-esteem. (17) Others have found that the self-concept of having ability is a significant factor in school achievement. (9) It appears, however, that positive self-esteem is necessary to achieve but not singularly sufficient to determine high achievement. What seems to happen is that students develop success-oriented personalities which look for ways to succeed while others develop failure-oriented personalities which look for ways to fail. In both instances such persons are attempting to be consistent with their self-images. (5)

A recent study by Maracek and Mattee indicates that the amount of certainty attached to an individual's self-appraisal will affect his/her acceptance of success. (53) They found that persons with high or low self-esteem who were uncertain of it tended to accept success no matter

whether it was by luck or self-determined effort. The same held true for persons with high self-esteem and certain of it. However, persons with low self-esteem and certain of it tended to reject their success experiences (in order to remain consistent with their failure image) but were inclined to be positively motivated by successes they saw as determined by luck or fate. The implication of this research seems to be that for those students who are "down and out" on themselves, we as teachers can be most helpful by providing success experiences in learning with varying degrees of certainty and self-responsibility.

Another possible interpretation of the relationship between negative student self-esteem and low achievement and poor motivation is Seligman's concept of *learned helplessness*. (63) He maintains that children can learn to be helpless in school, to believe that nothing that they do will be right. As he states, "Intelligence, no matter how high, cannot manifest itself if the child believes that his own actions will have no effect." (63) A number of experiments support his theory. A study by Dweck and Reppucci is representative. (25) Forty fifth-graders received solvable and unsolvable visual problems from two different teachers. At first, one teacher gave only solvable problems, the other unsolvable ones. Finally, the children were given solvable problems by the "unsolvable" teacher. They failed to solve these problems even if they were identical to the problems they had just solved with the "solvable" teacher. The researchers imply that the children came to believe they were helpless with the "unsolvable" teacher and so, even though faced with solvable problems, greatly underperformed.

Low student self-esteem may be in some instances translate into a belief that nothing the student does can make learning occur. Teachers may come to be identified by these students as symbols of subjects and situations in which they "don't have a chance." Only concrete successful learning which is guaranteed by appropriate student-task matching under careful teacher guidance may end such student mental sets.

Level of Aspiration

Another body of research, which relates to level of aspiration, provides more evidence about how academic successes and failures can influence a learner's motivation. Investigators generally define level of aspiration as the level of future performance on a familiar task that an individual expects to reach. (68) It appears that this expectation will not only

influence the learner's choice of tasks but the zest with which he/she will approach or avoid a given learning task.

A classic study by Child and Whiting explores the relationship between an individual's past history of successes and failures and that person's level of aspiration. (12) Other studies (33) have supported the three basic conclusions of their research, which are:

1. Success generally leads to a raising of the level of aspiration, and failure to a lowering.
2. The effects of failure on level of aspirations are more variable than those of success.
3. The stronger the success, the greater is the probability of a rise in the level of aspiration; the stronger the failure, the greater is the probability of a lowering.

The implication of this research for teaching is that the teacher can facilitate realistic enthusiasm by structuring classroom activities in which students experience success most of the time. Because the effects of failure are more variable it may be that occasional failure experiences increase a student's sense of reality and help the learner to avoid a distorted image of his/her abilities. This is supported by the research which indicates that students prefer learning tasks that are moderately difficult over those that are too easy. (52)

The Need for Achievement

One of the most studied and researched areas in the realm of student motivational characteristics has been the need for achievement. A person's need for achievement is inferred from that individual's display of achievement motivation, which is the process of planning and striving for excellence and progress; doing things better, faster, more efficiently; doing something unique, or in general, competing. It is not the accomplishments *per se*. It is not inferred from high grades, large salaries, or other status symbols. In general, achievement motivation is one's functional display of a concern for excellence in work that one values. (3) Investigators have discovered that individuals with high achievement motivation tend to act in certain characteristic ways:

1. Such individuals are interested in excellence for its own sake rather than the rewards it brings.

2. Individuals with high achievement motivation prefer situations in which they can take personal responsibility for the outcomes of their efforts.
3. They set goals carefully after considering the probabilities of success of a variety of alternatives.
4. They are more concerned with the medium-to-long range future than persons with low achievement motivation. (3)

In general, a person with high achievement motivation is an individual who is self-confident, a moderate risk-taker, wants immediate concrete feedback on his/her efforts, knows how to utilize his/her environment, and can tolerate delayed gratification for personal goals. These characteristics are educationally important in light of Coleman's nationwide study, which found two key attitudes that accounted for more variance in the amount of learning than teacher training, physical facilities, or curricula combined. (16) These key attitudes were student self-concept and the degree to which students believed they could control their own destiny. Other researchers have found small but statistically significant relationships between the need for achievement and the academic performance of superior high school students. (69) Also, "underachievers" appear to have very low achievement motivation. (31)

With respect to these findings dozens of achievement motivation training programs have taken place throughout the United States since 1965. In general, they encourage thinking and behaving in a manner which is characteristic of people with high achievement motivation. This usually means fostering basic values such as independence, acceptance of personal responsibility for the consequences of one's actions, and mastery of the environment according to standards of excellence. (3) Activities which involve arousing and internalizing a specific motive or new behavior are organized according to the following guidelines:

1. Focusing attention on what is happening here and now. This is usually done by dramatic settings and unusual procedures which are moderately different from everyday teaching methods.
2. Providing an intense, integrated experience of new thoughts, actions, and feelings. This is accomplished through a variety of games, exercises, and role-playing activities.
3. Helping the person make sense out of his/her experience by attempting to conceptualize what happened. Many traditional teaching methods for building vocabulary are used in this phase.

4. Relating the experience to the person's values, goals, behaviors, and relationships with others.
5. Applying the new thought, action, and feelings through practice. This is done through several real goal-setting situations.
6. Internalizing the changes. In this manner the instructors progressively withdraw external support while maintaining the student's voluntary involvement. (4)

It seems reasonable to conclude from the research at hand that achievement motivation training has, in a number of instances, increased student motivation and raised student academic achievement. (33) However, it is interesting to note McClelland's interpretation of some of these findings.

> It seems entirely possible that achievement motivation training is effective in the classroom without affecting much the level of achievement motivation in the students. What it does for the teachers is to improve their classroom management techniques, we have argued, and these in turn improve school learning by getting more attention, participation and accountability from the students.
>
> . . . So it is hard to know, technically speaking, whether achievement levels have actually been changed by the courses. We cannot rule out the possibility, but at this stage of the game we think it more parsimonious and more theoretically sound to conclude that achievement motivation training courses improve school learning by improving classroom and (student) life management skills rather than by changing achievement levels directly. (54)

A significant factor in achievement motivation studies, noted by de Charms, may be the student's perception of locus of control. His research in training children to develop personal responsibility and controls from within through methods which include goal-setting, self-evaluation, and competition with self-standards has led to increased motivation and academic achievement. (20, 19)

Many researchers have studied the effects of sex differences on achievement motivation. Studies using tasks that are perceived by the subject to arouse and heighten achievement motivation have shown significant differences between men and women. (30) Horner has found that the women she studied felt that academic success would threaten their femininity and possibly lead to social rejection. She has labeled this

phenomenon "fear of success." (43) There is some more recent evidence which indicates a decrease in sex differences in achievement motivation. (2) The strength and popularity of the feminist movement may be the cause of greater acceptance in women for their achievement strivings. The manner in which teachers reflect and model female and male stereotypes is certainly a factor to consider in teaching children as it may relate to the formation of their achievement needs.

MOTIVATION AND THE ROLE OF THE TEACHER

We have taken a look at student characteristics as they influence student motivation. There is much evidence that student variables are highly significant with regard to initiating, continuing, and choosing learning behavior. However, the teacher is still the "primary mover" in the eyes of society for what happens in the classroom. Recent teacher militancy and social changes such as integration and students' rights have probably served to increase the national focus on teacher accountability. Everyone wants more for the educational dollar. We as teachers have become the bankers for a national investment in education. In influencing student motivation, the research does reveal that we have some assets. They begin with ourselves as persons.

Teacher Personality and Characteristics

Student preferences for teachers have apparently not changed significantly in the last four decades. Surveys completed in 1934 (42), 1947 (75), and 1960 (61), as well as research in 1970 (49), show that students like teachers who are warm, considerate, cheerful, and friendly. However, there is very limited evidence that links such teacher characteristics with student interest (57) or productiveness (60) in relation to subject matter. In fact, there appears to be no specific trait or set of traits sufficiently associated with high quality teaching to provide a clear description of the type of teacher whose personality would insure effectiveness. (27) Based on the research to date, what teachers do to and with students may be much more important than what they seemingly are as persons.

Teacher Expectations

The educationally influential research of Rosenthal and Jacobson as initially described in their book, *Pygmalion in the Classroom*, highlights the commonsense assumption that human beings often behave on the basis of the expectations of significant others. (59) Rosenthal and Jacobson suggest that teacher expectations are a powerful determinant of student performance and that such expectations often function as self-fulfilling prophecies. Accordingly, what a teacher expects from a student becomes a teacher attitude toward the student that is translated into teacher behavior with the student. As Rosenthal explains,

> People who have been led to expect good things from their students, children, clients or what-have-you appear to:
> —create a warmer social-emotional mood around their "special" students (climate);
> —give more feedback to these students about their performance (feedback);
> —teach more material and more difficult material to their special students (input); and
> —give their special students more opportunities to respond and question (output). (58)

A number of criticisms have been raised regarding the Rosenthal and Jacobson study. Most significant have been those which question the validity of the data and analysis procedures. (67) Other researchers have failed to replicate the original findings. (14) However, there appears to be enough supporting research for us to accept that the goals students set for themselves and the confidence and style with which they approach those goals are often affected by the feedback and opportunities which teachers provide relative to their expectancies for students.

Setting Goals

The kind of goals and the manner in which students set goals for themselves can be a result of their expectations as well as their teachers' expectations. White has postulated that the desire to gain competence over one's environment serves as a powerful human motivator. (74) A similar motivation principle, de Charms's Personal Causation, is that a person's primary motivation (beyond survival) is to be effective in

causing changes in his/her environment. (19) The way in which a student sets goals is probably one of the most concrete means by which he/she can comprehend his/her personal effectiveness.

In his "Pawns to Origins" study, de Charms used the following goal-setting sequence to help elementary students to learn to act in a way that would be successful:

1. Analyze personal strengths and weaknesses.
2. Choose personal goals realistically, noting own capabilities and realities of the situation.
3. Select immediate concrete actions that can be taken now.
4. Determine ways to tell whether action taken is goal-oriented. (20)

In short, he taught students to think through the behavioral sequence necessary to reach a goal. Once it had been determined that the goal was a realistic one, these students displayed more achievement motivation, more realistic goal-setting, fewer feelings of powerlessness, more academic achievement, and fewer absences and tardies than nonparticipating control students. The effective use of contracts and goal-setting strategies have been amply documented in achievement motivation and contingency contracting studies. (3, 18)

Instructional Objectives

On a more direct and immediate basis, research has indicated that teachers may influence the motivation of their students with the use of specific instructional objectives. These "behavioral" objectives are statements of what the student will do, perform, or achieve on completing a sequence of instruction; the objectives are described in such a way that the teacher and student can observe the student's behaviors directly (e.g., "Each student will type 40 words a minute without error . . . Each student will correctly spell orally at least 12 out of 15 of the words on the given list"). According to the supporters of this approach, student motivation is enhanced because the learner is able to anticipate the results of his/her activities and regulate his/her behavior with more certainty and efficiency. (18) Critics of this approach point out that such objectives may overemphasize immediate outcomes, trivial behaviors, and conformity as well as reduce spontaneity and creativity in students. (26, 29)

Duchastel and Merrill, in a recent study which reviewed the impact of objectives in over 50 investigations, conclude that although a number of

studies have shown facilitative effects, an equal number of studies have failed to demonstrate any significant differences. (24) They indicate that since objectives sometimes help learning and are almost never detrimental to learning, making them available to students is a sensible teaching option. They also note that beyond the facilitation of student learning, behavioral objectives seem to give direction to teaching and curriculum development as well as provide guidance for evaluation.

Providing Feedback

Another immediate teacher behavior that appears to have a facilitating effect on student motivation and subsequent performance is providing informative feedback to the student. This allows students to evaluate their progress, enhance their effort toward realistic goals, and correct their errors without delay.

A broad representative study involving over 2000 students was conducted by Page. (56) Subjects were randomly assigned to one of three experimental groups. Each student was given a letter grade (A, B, C, D, or F) as appropriate for their objective test. In addition, the papers of one-third were returned with no written teacher comments, the papers of another third were returned with natural and appropriate comments for the particular student concerned, and the papers of the other third were returned with prespecified but encouraging teacher comments, such as (all B papers) "Good work, keep at it," or (all F papers) "Let's raise this grade." On the next exam, students who had previously received teacher comments, both natural and specified, outperformed the students who had received no comments. Other similar studies have replicated comparable results. (66)

The message from the research on informative feedback seems to be clear. *Student awareness of progress usually serves as an incentive toward increased effort.*

Reinforcement

Teacher feedback can also be considered to be a form of reinforcement. Although reinforcement theory is only one "window of reality" by which to view and interpret student motivation, it does offer well-researched, insightful, and practical suggestions for teachers to follow in the quest to facilitate student motivation.

Glaser and Cooley have recently defined and summarized the relevant concepts and research in this field as they relate to motivational variables (34):

1. A reinforcing consequence is defined as an event or state of affairs that changes subsequent behavior when it temporally follows an instance of that behavior. (Example: A student who is given praise for higher reading skill will tend to read more after that praise is given.)

2. Throughout all the various theoretical interpretations of how the mechanism of reinforcement work, the operational description is clear. Behavior is acquired and its occurrence regulated as a result of a contingent relationship between the response of an individual and a consequent event. (Example: As the amount of recognition for a given student task changes so will the task performance change to some extent.)

3. The effective application and scheduling of reinforcing events, such as the results of one's work, praise, social approval, attention, or leadership have been established as important variables to be considered in the design of educational environments.

4. When individuals perform some activity and the results of that activity are fed back to them, the observation of this change is highly motivating, particularly if the change that is produced shows that some novel feature or additional complexity has been introduced into the situation. (Sensory reinforcement)

5. Access to a more preferred behavior which has a high probability of occurrence can be used to reinforce a less preferred activity that has a lower probability of occurrence. (Example: Permitting free play for a student only after a given assignment has been completed.) Thus, in the classroom the reinforcing event can be the activity that becomes possible once certain knowledge and skills have been attained.

Praise and Criticism

Praise is often considered to be a good example of positive reinforcement, however, Van De Riet's study obtained an actual reduction in performance for praised underachievers, (70) and Farson indicates that praise may be of limited and questionable value as a motivator because

—Praise is an evaluation, and to be evaluated can make people uncomfortable, especially if they feel they may be found wanting.

—Praise can be used as a form of manipulation to direct behavior.
—Praise can be used to introduce obligations such as "to do our best," "be more perfect," and "live up to our talents."
—Praise often puts or means control is in the hands of the praiser and not the person being praised. (28)

As a general rule, praise, according to the research, is better than criticism. Hamachek's summarization of such studies offers some insightful qualifications:

> it appears that the successful use of praise and criticism depends both upon the student and his needs and prior experiences and on the teacher who uses praise and criticism. Being ignored is less motivating than either praise or criticism; and as a general statement, praise that is not indiscriminately given helps most students feel more personally adequate and confident. Indeed, recent research not only shows that more learning goes on under praise conditions than reproof conditions but that praise and reproof in one subject-matter area in the classroom may well transfer, in terms of effects on academic performance, to other classroom behavior that is entirely distinct and independent. We should not be surprised if the student harshly criticized in math class does less than his best in English. Feelings are like that—they follow one around. (40)

Technology

Since the research has demonstrated that what teachers do is significantly related to student motivation, it is interesting to examine what technical means teachers might use to facilitate motivation. At this point in time at least four areas provide enough evidence to allow further discussion of their potential application.

Educational Games Games have often been used in teaching to facilitate involvement and enthusiasm for learning. Because of social values related to issues such as hard work, perseverance, competition, and having fun, the use of games as a teaching strategy has been subjected to criticism and debate.

The motivational properties of educational games for school-disadvantaged students, such as active involvement and immediate

reinforcement, have been detailed by Abt. (1) He has defined four types of games in terms of emphasis and noted the best educational application of them:

A. Skill	—Situation outcome dependent on capabilities
Examples	—Business, chess, tennis
Application	—To stimulate specialized competence, self-reliance, rational planning
B. Chance	—Situation outcome independent of player capabilities
Examples	—Dice, speculation, romance, roulette, horse racing
Application	To develop capacity to deal with failure, respect for uncertainty, understanding of probability and risk
C. Model Reality	—Simulation of nonplay behavior
Examples	—Fiction, art, military maneuvers, theater
Application	—To motivate and develop generalized competence, comprehension of context, cooperative social behavior
D. Fantasy Exhilaration	—Release from conventional perceptions and inhibitions
Examples	—Acting, dancing, singing
Application	—To provide recreation, rejuvination of interest, emotional catharsis, release from rigidity (1)

The empirical research on the use of educational games as evidence for increased motivation appears to be growing. The use of games for teaching purposes in a programmatic manner is still at a relatively early stage of development with inconclusive but promising results. (36)

Television Television is widely used as an instructional medium. From "Sesame Street" to hundreds of local instructional television efforts, this form of media definitely affects the daily lives of students. But to generalize about the effect of television on student motivation is like generalizing about the effects of the use of books on student motivation—meaningless. So much is dependent on structure, content, and organization.

Chu and Schramm have reviewed 207 studies representing over 400 comparisons between instructional television and conventional teaching. They found that essentially the two mediums of instruction appear to be about equally effective. (13)

Programmed Instructional Materials The research on programmed instructional materials is extensive but not dramatically informative regarding student motivation. Teaching machines are probably used less today than they were in the late 1950's and early 1960's. Programmed textbook materials are more widely used and seem effective for some purposes such as independently study. (35)

Schramm has reviewed 165 studies on programmed instructional materials that were largely linear—in textbook form. (62) He concludes that students learn from such materials but with no distinct advantage over learning from regular books, television, or other types of materials. He notes that the feedback element (immediate information as to the correct answer) of programmed materials is a significant aspect in aiding learning.

Computer-Assisted Instruction (CAI) Computer-assisted instruction is one of the most imaginative educational innovations of recent times. There appear to be basically five modes of instruction involved in CAI (65):

1. Tutorial—The computer is programmed to instruct by "talking" directly to the student and receiving information from him/her.
2. Drill and Practice—The computer presents repetitive exercises in math, grammar, etc.
3. Inquiry—The computer presents a problem to the student who then asks for assistance from the computer in the form of information and eventually attempts to solve the problem correctly.
4. Gaming and Simulation—The computer presents a complex problem and varying responses depending on the decisions of the student.
5. Problem Solving—The student uses the computer as a calculator/computer in doing course work in math, statistics, etc.

Basic problems in research on CAI appear to be twofold. Most research tends to be in the drill and practice mode, and research of a longitudinal nature is limited. What students might feel about the long-term use of a

computer is debatable. Critics suggest such extended use (over a year) would be dehumanizing. From the research available, it seems reasonable to expect superior or equal performance on the part of students using CAI. (39)

In a study by Kounin of the role of the teacher in affecting motivation, task attributes (how the teacher handles the subject matter) were found to be much more salient in student descriptions of teachers than were personal attributes (descriptive statements of the teacher as a person such as "nice," "harsh," "grouchy," etc.) (49) This was true for both high-motivation-to-learn classes and for low-motivation-to-learn classes. More teachers in high-motivation-to-learn classes were described as explaining the subject well, as using positive approaches to teaching the subject, and as making appropriate task demands; more teachers in the low-motivation-to-learn classes were described as explaining the subject poorly and as using ineffective teaching methods. Moreover, Kounin found that task attributes outweighed personal attributes in student descriptions even more during the third month of a class than during the first two weeks of a class.

It would seem on the basis of this evidence that it is what teachers do that affects motivation on the part of their students.

MOTIVATION AND THE GOAL STRUCTURE OF THE LEARNING PROCESS

Since student motivation is dependent on a regular basis of daily classroom learning goals, the way in which a student relates to other people in working toward the accomplishment of those goals appears significant in affecting his/her motivation. This relationship is often the responsibility of the teacher, who establishes the learning goal structure for students. A goal structure specifies the type of interdependence existing among students. It describes the ways in which students will relate to each other and to the teacher in working toward the accomplishment of instructional goals. (44)

The three types of goal structures for which research evidence exists are cooperative, competitive, and individualistic. A cooperative goal structure exists when students perceive that they can obtain their goal if, and only if, the other students with whom they are linked can obtain their

goal. (21) Two students writing a paper together or a group of students making a single project are examples of a cooperative goal structure. A competitive goal structure exists when students perceive that they can obtain their goal if, and only if, the other students with whom they are linked fail to obtain their goal. (21) A student attempting to write the best paper in a class or a group of students who are completing tasks that will each be graded on a curve are examples of a competitive goal structure. An individualistic goal structure exists when the achievement of the goal by one student is unrelated to the achievement of the goal by other students; whether or not a student achieves a goal has no bearing upon whether other students achieve their goals. (44) Students working independently to master a list of number facts or a student working through a programmed text on spelling are examples of an individualistic goal structure

A review of the research which has examined these three goal structures provides the following summary statements:

1. There is evidence that most students perceive school as being competitive. (45)
2. Students become more competitive the longer they are in school or the older they become. (51, 55)
3. There is consistent research evidence that students will become more involved in instructional activities and tasks under cooperative rather than under competitive conditions. (22, 41, 38)
4. Students prefer and like cooperatively structured over competitively structured learning situations. (23, 45)
5. Competition may be superior to cooperative or individualistic goal structures when a task is a simple drill activity or when sheer quantity of work is desired on a mechanical or skill-oriented task that requires little if any help from another person. (46, 44)
6. In problem-solving activities, there is significant research support that indicates that cooperative goal structures result in higher achievement than do competitive goal structures or individualistic goal structures. (37, 71)
7. Probable consequences of the use of continual competitive goal structures are student anxiety and avoidance reactions, group fragmentation and hostility, and subversion of intrinsic motivation for learning. (44)

Based on their research and comprehensive review of other studies in

this area, Johnson and Johnson recommended the following conditions (44) as most appropriate for utilization of each of the goal structures:

1. *Cooperative*—The type of instructional activities are problem solving, divergent thinking (creative) tasks, and relatively ambiguous assignments in which students do the clarifying, decision making, and inquiring. Each student perceives the learning goal as important and expects the group to achieve the goal through sharing of ideas and materials with mutual support for risk taking and division of labor. Students perceive themselves as the major resource for assistance, support, and reinforcement.
2. *Individualized*—The type of instructional activities are specific skill or knowledge acquisition and well-defined assignments. Each student perceives the learning goal as important and expects to take a major part of the responsibility for completing the task and evaluating his/her progress and quality of effort. Students perceive the teacher as the major resource for assistance, support, and reinforcement.
3. *Competitive*—The type of instructional activities are skill practice and knowledge recall and review with clearly defined rules for competing. Each student perceives the learning goal as *not* to be of great importance, and he/she can accept either winning or losing. Each student expects to have an equal chance of winning; to enjoy the activity (win or lose); to monitor the progress of competitors; and to compare ability, skill, or knowledge with peers. Students perceive the teacher as the major resource for assistance, support, and reinforcement.

CONCLUDING COMMENT

Based on the research to date, motivation remains an elusive and difficult concept to apply with accuracy and predictability in learning environments. Yet the teacher remains the single most important person to do this. The educator's awareness and professional understanding of the research outlined in this book can enhance the chances for success in this endeavor. There seem to be many possible ways to positively influence student motivation. How and when to utilize this knowledge is a challenge to our motivation in the art and science of teaching.

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